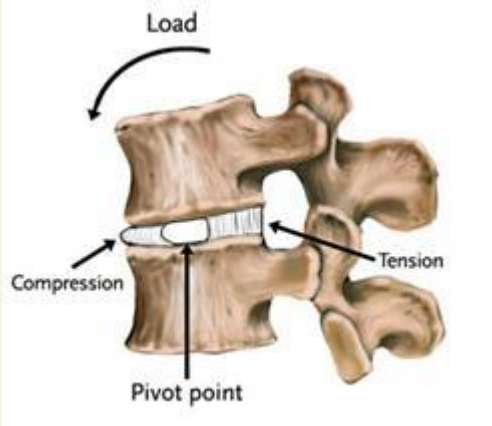


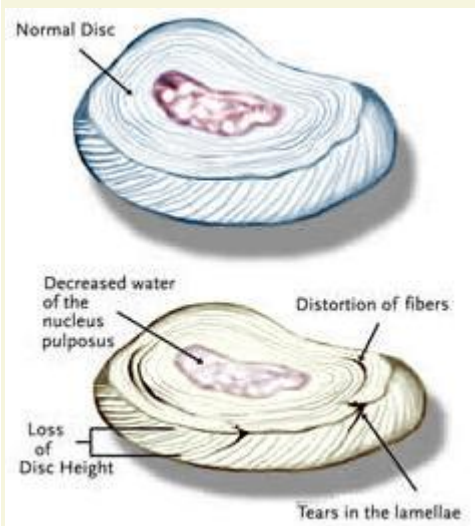
# Degenerative Joint or Disc Disease in the Spine

*Degenerative Spine Disease refers to any degenerative or degenerating condition affecting the spinal column and the bone, the disc or the (facet) joints of the spine.*

There are different disorders encompassing the definition of this term, with varying symptoms and severity of symptoms associated with



them. There is no one cause for degenerative spine disease. Sometimes they can be caused by the normal physical strain you experience throughout the day, and other times they can be caused by trauma. Though everyone is susceptible to having degenerative spine disease, some people may be more likely to develop symptoms than others. Degenerative Disc Disease (DDD) is part of the natural process of growing older. Unfortunately, as we age, our intervertebral discs lose their flexibility, elasticity, and shock absorbing characteristics. The ligaments that surround the disc, called the annulus fibrosis, become brittle and they are more easily torn. At the same time, the soft gel-like center of the disc, called the nucleus pulposus, starts to dry out and shrink. Every patient is different, and it is important to realize that not everyone develops symptoms as a result of degenerative disc disease.



When Degenerative Disc Disease becomes painful or symptomatic, it can cause several different symptoms, including neck pain, nerve root pathology, and spinal cord compression. These symptoms are caused by the fact that worn out discs are a source of pain because they do not function as well as they once did, and as they shrink, the space available for the nerve roots (Foraminal Stenosis) and the spinal cord also shrinks. As the discs between the intervertebral

bodies start to wear out, the entire cervical spine becomes less flexible. As a result, people complain of neck pain and stiffness, especially towards the end of the day.

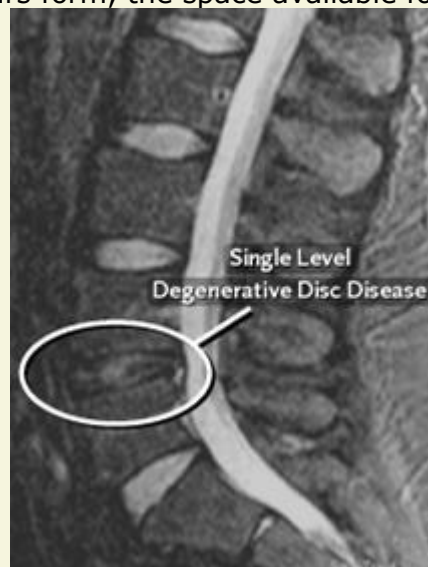
## Symptoms

The common symptoms that suggest that Degenerative Disc Disease may be responsible for a person's pain include neck pain, pain that radiates down to the back of the shoulder blades or into the arms, numbness and tingling, and sometimes even difficulties with hand dexterity or walking. Muscle weakness occurs at a later stage in the degenerative process than pain does, and it is a sign that disease is relatively more serious. In severe cases of cervical DDD, where there is evidence of spinal cord compression, individuals may experience symptoms of sciatica and back pain, and lower extremity weakness.

## Diagnosis

The diagnosis of degenerative disc disease begins with a complete physical examination of the neck, arms and lower extremities. Your doctor will examine your neck for flexibility, range of motion, and the presence of certain signs that suggest that your nerve roots or spinal cord are affected by degenerative changes in your neck. This often involves testing the strength of your muscles to make sure that they are still working normally. You will often be asked to fill out a diagram that asks you where your symptoms of pain, numbness, tingling and weakness are occurring.

A routine set of x-rays is also usually ordered when a patient with neck pain goes to see a doctor. If Degenerative Disc disease is present, the x-rays will often show a narrowing of the spaces between the vertebral bodies, which indicates that the disc has become very thin or has collapsed. Bone spurs begin to form around the edges of the vertebral bodies and also around the edges of the facet joints in the spine. These bone spurs can be seen on an X-ray, where they are called osteophytes. As the discs collapse and bone spurs form, the space available for the nerve roots and



the spinal cord starts to shrink. The nerve roots exit the spinal canal through a bony tunnel called the neuroforamen, and it is at this point that the nerve roots are especially vulnerable to compression.

In many situations, doctors will order an MRI or a CT (CAT) scan in order to evaluate

the degenerative changes in the cervical spine more completely. An MRI scan is very useful for determining where disc herniations have occurred and where the nerve roots or spinal cord are being compressed. A CT scan is often used to evaluate the bony anatomy in the cervical spine, which can show how much space is available for the nerve roots and spinal cord within the spinal canal.

Your doctor will be able to discuss with you what your diagnosis means in terms of treatment options. For most people who do not have evidence of nerve root compression with muscle weakness, the first line of therapy includes non-steroidal anti-inflammatory drugs and Physical Therapy.

Surgery for cervical spine disease is offered as an early option for people who have evidence of muscle weakness that is being caused by nerve root or spinal cord compression. This is because muscle weakness is a definite sign that the nerves are being injured (more seriously than when pain is the only symptom) and relieving the pressure on the nerves is more of an urgent priority. In other situations, surgery is offered after Physical Therapy, rest, and medications have failed to adequately relieve the symptoms of pain, numbness and weakness.

## **Treatment**

Your doctor will discuss with you the treatment options appropriate for your diagnosis. For most people who do not have evidence of nerve root compression with muscle weakness, conservative, non-surgical therapies, such as medication, rest, exercise and Physical Therapy, are typically recommended.

Surgery is offered only after conservative treatment has failed to adequately relieve the symptoms of pain, numbness and weakness over a significant period of time. The benefits of spine surgery, however, must be weighed against the risks. Your surgeon will be able to discuss the risks and benefits of surgery with you, and the likely results of operative versus non-operative treatment.